

Explanation of Amendments in the Claims:

1.(currently amended) A method of machining a workpiece with a router bit comprising:

providing a workpiece;

providing a router having a router motor and a router bit rotated by the router motor;

providing a plate defining a surface of the plate with the surface in contact with the workpiece;

providing a bit hole through the plate with a bit opening at the surface through which the router bit extends for engaging the workpiece which is in contact with the surface so that the bit cuts a shape into the workpiece;

causing relative translational movement between the workpiece and the router bit so as to effect a cutting action on the workpiece to form the shape therein by the router bit as the bit rotates so as to cause waste material to be generated by removal of material from the workpiece as the relative movement between the bit and the workpiece acts to form the shape along the workpiece;

the surface of the plate being arranged such that the relative movement between the router bit and the workpiece also causes relative sliding movement between the surface of the plate and the workpiece while the surface remains in contact with the workpiece;

providing a suction duct;

providing at least a first suction opening at the surface of the plate;

providing a suction hole extending from the first suction opening at the surface of the plate to the suction duct on a side of the plate opposite to the surface of the plate;

providing the first suction opening at the surface at a location spaced from the bit opening of the surface so that the first suction opening is separated from the bit opening by a portion of the surface over which the workpiece can slide while in contact with the portion of the surface;

connecting the suction duct to a source of suction to draw air and the waste material through the first suction opening;

and directing the relative translational movement between the workpiece and the router bit such that the workpiece moves relative to the surface from the bit toward the first suction opening over the portion of the surface thus causing the cut shape to extend from the bit to the first suction opening and causing the shape in the workpiece and the portion of the surface to co-operate to define a passage for the waste material from the bit to the first suction opening.

2.(currently amended) The method according to Claim 1 wherein the plate forms at least part of a router table such that the surface forms an upper work surface of the router table, wherein the router is supported below the router table such that the router has the router bit driven by the router motor about a bit axis which is at right angles to the work surface, such that the router bit projects through the bit opening to a position above the work surface and such that the first suction opening extends from the work surface to an under side of the table.

3.(previously amended) The method according to Claim 2 wherein the plate forms a portion only of the table which defines an insert into an opening in the table.

4.(currently amended) The method according to Claim 2 wherein the first suction opening is located in an extension piece mounted at one edge of the work surface of the table.

5.(previously amended) The method according to Claim 1 wherein there is provided a second suction opening located at the surface, the second suction opening being at a location spaced from the bit opening by a second portion of the surface and from the first suction opening by a third portion of the surface.

6.(original) The method according to Claim 5 wherein the second suction opening is arranged substantially on a line from the axis of bit which line is at right angles to a line joining the first suction opening and the axis of the bit.

7.(previously amended) The method according to Claim 2 wherein the relative translational movement between the workpiece and the router bit is directed by a guide fence on the table.

8.(previously amended) The method according to Claim 5 wherein the relative translational movement between the workpiece and the router bit is controlled such that the cut shape is moved from the first suction opening to the second suction opening.

9.(currently amended) The method according to Claim 2 wherein the router motor has an end plate clamped to the under side of the plate, wherein the first suction opening is located in a position on the plate which is outside of the area of the

end plate of the router motor and wherein there is provided a suction head connected to the plate for connection of said suction source to the first suction opening.

10.(currently amended) The method according to Claim 2 wherein the router motor has an end plate clamped to the under side of the plate, wherein the first suction opening is located in a position on the plate which is inside of the area of the end plate of the router motor and wherein there is provided a duct formed in the end plate of the router motor which connects to the suction source and to the first suction opening.

11.(previously amended) The method according to Claim 10 wherein the duct formed in the end plate of the router motor is separated from a bit opening in the end plate.

12.(previously amended) The method according to Claim 10 wherein there is provided a second suction opening through the plate from the work surface to the under side of the table, the second suction opening being at a location spaced from the bit opening and from the first suction opening, the first and second suction openings being connected to the same duct formed in the end plate.

13.(previously amended) The method according to Claim 1 wherein the plate forms an end plate of the router motor.

14.(currently amended) The method according to Claim 13 wherein the end plate includes a portion thereof containing said first suction opening which can rotate around the bit axis relative to the router motor so as to move the angular location of the first suction opening around the bit axis relative to the router motor.

15.(previously amended) The method according to Claim 14 wherein the portion of the end plate is annular and surrounds a fixed inner portion of the end plate.

16.(previously amended) The method according to Claim 14 wherein the portion of the end plate includes raised guide members on the surface thereof for sliding of the portion relative to the workpiece.

17.(currently amended) The method according to Claim 14 including guiding rotation of the portion of the end plate around the axis so as to locate the first suction opening on a line along the direction of movement of the router bit.

18.(previously amended) The method according to Claim 17 wherein rotation of the portion of the end plate is guided by providing engagement members on the surface of the portion of the end plate arranged to cause rotation of the portion of the end plate by friction with the workpiece.

19.(currently amended) The method according to Claim 17 wherein rotation of the portion of the end plate is guided by providing elongate guide ribs on the surface of the portion of the end plate arranged longitudinal of a line joining the first suction opening to the axis of the router bit.

20.(currently amended) A combination of a router and a router table member comprising

a router having a router motor and a router bit for rotation by the router motor;

a router table member having an upper table surface over which a workpiece is to be moved and a bottom surface opposite to the upper table surface;

the router being connected underneath the bottom surface such that the router has the router bit driven by the router motor about a bit axis which is at right angles to the upper table surface;

the router table member having a router bit hole through the table member and defining a router bit opening in the upper table surface through which the router bit extends for engaging a workpiece in contact with the upper table surface so that the bit cuts a shape into the workpiece;

a guide for guiding relative translational movement between the workpiece and the router bit so as to effect a cutting action on the workpiece to form the shape therein by the router bit as the bit rotates so as to cause waste material to be generated by removal of material from the workpiece as the relative movement between the bit and the workpiece acts to form the shape along the workpiece;

the upper table surface being arranged such that the relative movement between the router bit and the workpiece also causes relative sliding movement between the upper table surface and the workpiece while the upper table surface remains in contact with the workpiece;

at least a first suction opening at the upper table surface of the table member;

a suction hole extending from the work surface to the bottom surface of the table member;

the first suction opening being located in the upper table surface at a location spaced from the bit opening so that the first suction opening is separated from

the bit opening by a portion of the upper table surface over which the workpiece can slide while in contact with the upper table surface;

and a suction duct for connection to the suction hole in the table member so as to draw air and waste material through the first suction opening in the upper table surface to the suction duct;

the guide being arranged in a direction for directing the relative translational movement between the workpiece and the router bit such that the workpiece moves relative to the upper table surface from the bit toward the first suction opening over the portion of the upper table surface thus causing the cut shape to extend from the bit to the first suction opening and causing the shape in the workpiece and the portion of the upper table surface to co-operate to define a passage for the waste material from the bit to the first suction opening.

21.(currently amended) The combination according to Claim 20 wherein the first suction opening is located in the upper table surface.

22.(currently amended) The combination according to Claim 20 wherein the first suction opening is located in an extension piece mounted at one edge of the upper table surface.

23.(previously amended) The combination according to Claim 20 wherein there is provided a second suction opening through the table member from the upper table surface, the second suction opening being at a location spaced from the bit opening by a second portion of the upper table surface and from the first suction opening by a third portion of the upper table surface.

24.(previously amended) The combination according to Claim 20 wherein the router motor has an end plate clamped to the bottom surface of the table member, wherein the suction hole is located at a position on the table member which is outside of the area of the end plate of the router motor and wherein there is provided a suction head connected to the table member for connection of said suction duct to the suction hole.

25.(currently amended) The combination according to Claim 20 wherein the router motor has an end plate clamped to the bottom surface of the table member, wherein the suction hole is located in at a position on the table member which is inside of the area of the end plate of the router motor and wherein there is provided a duct formed in the end plate of the router motor which connects to the suction duct and to the suction hole.

26.(withdrawn) A router comprising  
a router body having an end plate;  
a router motor mounted in the router body;  
a router bit driven by the router motor about a bit axis which is at right angles to an end surface of the end plate and arranged such that the router bit can project through a bit opening through the end plate;  
and a suction duct in the end plate of the router body for connection to a suction opening end face so as to draw air and waste material through the suction opening to the suction duct  
wherein the duct formed in the end plate of the router is arranged such that the duct is separated from the bit opening.

27.(withdrawn) The router according to Claim 26 wherein the suction duct in the end plate is arranged such that it can also co-operate with a second suction opening through the end face, the second suction opening being at a location spaced from the bit opening and from the first suction opening.

28.(withdrawn) The router according to Claim 26 wherein the end plate includes a portion thereof containing said suction opening which can rotate around the axis relative to the router motor so as to move the angular location of the suction opening around the axis relative to the router motor.

29.(withdrawn) The router according to Claim 28 wherein the portion is annular and surrounds a fixed inner portion of the end plate.

30.(withdrawn) The router according to Claim 28 wherein the portion includes raised guide members on the surface thereof for sliding of the portion relative to the workpiece.

31.(withdrawn) The router according to Claim 14 including a guide member for guiding rotation of the portion around the axis so as to locate the suction opening on a line along the direction of movement of the router bit relative to the workpiece so that the suction opening is located behind the bit.

32.(withdrawn) The router according to Claim 17 wherein the guide member comprises one or more engagement members on the surface thereof arranged to cause rotation of the portion by friction with the workpiece.

33.(withdrawn) The router according to Claim 17 wherein guide member comprises at least one elongate guide rib on the surface thereof arranged longitudinal of a line joining the suction opening to the router bit.

34.(withdrawn) A router table insert plate comprising:  
a plate having a work surface over which a workpiece is to be moved;  
holes in the plate arranged for connection to an end plate of a router  
having a router bit driven by a router motor about a bit axis which is at right angles to  
the table surface;

a router bit opening through the plate arranged so as to be located at the  
router bit;

and a suction opening through the plate from the work surface to an  
opposed side of the table, the suction opening being at a location spaced from the bit  
opening, and being arranged for connection to a suction duct on the opposed side.

35.(withdrawn) The plate according to Claim 34 wherein the suction  
opening is located in a position on the table which is outside of the area of the end plate  
of the router and including a suction duct attached to the plate and connected to the  
suction opening on the opposed side of the table so as to draw air and waste material  
through the suction opening to the suction duct.

36.(withdrawn) The plate according to Claim 34 wherein there is  
provided a second suction opening through the table from the work surface to an  
opposed side of the table, the second suction opening being at a location spaced from  
the bit opening and from the first suction opening.

37.(withdrawn) The plate according to Claim 34 wherein there is  
provided a second suction opening through the table from the work surface to an  
opposed side of the table, the second suction opening being at a location spaced from  
the bit opening and from the first suction opening, the first and second suction openings

being connected to the suction duct by a housing attached on the opposed side of the plate.

38.(currently amended) A method of machining a workpiece on a router table with a router having a router motor and a router bit rotated by the router motor and including a source of suction, the method comprising:

providing a plate for mounting in an opening in the table such that the plate defines an upper surface of the plate with the upper surface arranged for contact with the workpiece;

attaching an end plate of the router motor to an under side of the plate such that the router bit extends through a bit hole through the plate with a bit opening at the upper surface through which the router bit extends for engaging the workpiece which is in contact with the upper surface so that the bit cuts a shape into the workpiece;

causing relative translational movement between the workpiece and the router bit so as to effect a cutting action on the workpiece to form the shape therein by the router bit as the bit rotates so as to cause waste material to be generated by removal of material from the workpiece as the relative movement between the bit and the workpiece acts to form the shape along the workpiece;

the upper surface of the plate being arranged such that the relative movement between the router bit and the workpiece also causes relative sliding movement between the upper surface of the plate and the workpiece while the upper surface remains in contact with the workpiece;

providing at least a first suction opening at the upper surface of the plate;

providing a suction hole extending from the first suction opening at the upper surface of the plate to the under side of the plate opposite to the surface;

providing the first suction opening at the upper surface at a location spaced from the bit opening in the upper surface so that the first suction opening is separated from the bit opening by a portion of the upper surface over which the workpiece can slide while in contact with the portion of the upper surface;

connecting the source of suction to the suction hole in the plate to draw air and the waste material through the first suction opening in the upper surface;

and directing the relative translational movement between the workpiece and the router bit such that the workpiece moves relative to the upper surface from the bit toward the first suction opening over the portion of the upper surface thus causing the cut shape to extend from the bit to the first suction opening and causing the shape in the workpiece and the portion of the upper surface to cooperate to define a passage for the waste material from the bit to the first suction opening.

39.(previously presented) The method according to Claim 38 wherein there is provided a second suction opening located at the upper surface, the second suction opening being at a location spaced from the bit opening by a second portion of the upper surface and from the first suction opening by a third portion of the upper surface.

40.(previously presented) The method according to Claim 39 wherein the second suction opening is arranged substantially on a line from the axis of bit which line is at right angles to a line joining the first suction opening and the axis of the bit.

41.(previously presented) The method according to Claim 39 wherein the relative translational movement between the workpiece and the router bit is controlled such that the cut shape is moved from the first suction opening to the second suction opening.

42.(previously presented) The method according to Claim 38 wherein the relative translational movement between the workpiece and the router bit is directed by a guide fence on the table.

43.(currently amended) A combination of a router and a router table comprising:

a router having a router motor and a router bit for rotation by the router motor;

a plate for mounting in an opening in the table such that the plate defines an upper surface of the plate with the upper surface arranged for contact with a workpiece;

an end plate of the router motor being attached to an under side of the plate such that the router bit extends through a bit hole through the plate with a bit opening at the upper surface of the plate through which the router bit extends for engaging a workpiece in contact with the upper surface so that the bit cuts a shape into the workpiece;

a guide for guiding relative translational movement between the workpiece and the router bit so as to effect a cutting action on the workpiece to form the shape therein by the router bit as the bit rotates so as to cause waste material to be generated

by removal of material from the workpiece as the relative movement between the bit and the workpiece acts to form the shape along the workpiece;

the upper surface of the plate being arranged such that the relative movement between the router bit and the workpiece also causes relative sliding movement between the upper surface of the plate and the workpiece while the upper surface remains in contact with the workpiece;

at least a first suction opening at the upper surface of the plate;

a suction hole extending from the first suction opening at the upper surface of the plate to the under side of the plate opposite to the surface;

the first suction opening being located in the upper surface at a location spaced from the bit opening in the upper surface so that the first suction opening is separated from the bit opening by a portion of the upper surface over which the workpiece can slide while in contact with the portion of the upper surface;

a source of suction connected to the suction hole in the plate to draw air and the waste material through the first suction opening in the upper surface;

the guide being arranged in a direction for directing the relative translational movement between the workpiece and the router bit such that the workpiece moves relative to the upper surface from the bit toward the first suction opening over the portion of the upper surface thus causing the cut shape to extend from the bit to the first suction opening and causing the shape in the workpiece and the portion of the upper surface to cooperate to define a passage for the waste material from the bit to the first suction opening.

44.(previously presented) The combination according to Claim 43 wherein there is provided a second suction opening located at the upper surface of the plate, the second suction opening being at a location spaced from the bit opening by a second portion of the upper surface and from the first suction opening by a third portion of the upper surface.

45.(previously presented) The combination according to Claim 43 wherein the second suction opening is arranged substantially on a line from the axis of bit which line is at right angles to a line joining the first suction opening and the axis of the bit.

46.(currently amended) A combination of a router and a router table comprising:

a router having a router motor and a router bit for rotation by the router motor;

a plate for mounting in an opening in the table such that the plate defines an upper surface of the plate with the upper surface arranged for contact with a workpiece;

an end plate of the router motor being attached to an under side of the plate such that the router bit extends through a bit hole through the plate with a bit opening at the upper surface of the plate through which the router bit extends for engaging a workpiece in contact with the upper surface so that the bit cuts a shape into the workpiece;

the upper surface of the plate being arranged to allow relative translational movement between the workpiece and the router bit so as to effect a cutting action on

the workpiece to form the shape therein by the router bit as the bit rotates so as to cause waste material to be generated by removal of material from the workpiece as the relative movement between the bit and the workpiece acts to form the shape along the workpiece;

the upper surface of the plate being arranged such that the relative movement between the router bit and the workpiece also causes relative sliding movement between the upper surface of the plate and the workpiece while the upper surface remains in contact with the workpiece;

a first suction opening at the upper surface of the plate;

a first suction hole extending from the first suction opening at the upper surface of the plate to the under side of the plate opposite to the surface;

the first suction opening being located in the upper surface at a location spaced from the bit opening in the upper surface so that the first suction opening is separated from the bit opening by a first portion of the upper surface over which the workpiece can slide while in contact with the upper surface;

a source of suction connected to the first suction hole in the plate to draw air and the waste material through the first suction opening in the upper surface;

a second suction opening at the upper surface of the plate;

the second suction opening being at a location spaced from the bit opening by a second portion of the upper surface and from the first suction opening by a third portion of the upper surface, over which second and third portions the workpiece can slide while in contact with the upper surface;

the second suction opening being arranged substantially on a line from the axis of bit which line is at right angles to a line joining the first suction opening and the axis of the bit.